SQL

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SCHEDULE

- Recap
- Data type
- Sql
- quiz

RECAP

- WHY DBMS?
- PRIMARY KEY
- FOREIGN KEY
- COMPOSITE KEY
- COMPOUND KEY

RECAP

- Composite key
  - (n.) In database design, a **composite key** is a candidate key that consists of two or more attributes (table columns) that together uniquely identify an entity occurrence (table row). A **compound key** is a composite key for which each attribute that makes up the key is a foreign key in its own right.
- Compound key
  - (n.) A compound key is **similar to a composite key in that two or more fields are needed to create a unique value**. However, a compound key is created when two or more primary keys from different tables are present as foreign keys within an entity. The foreign keys are used together to uniquely identify each record.

Data type

- Different database system supports different data types
- Below used T-SQL as example
- Documentation
- Why does it matter?

Data type

- Numeric
  - Exact numerics
  - Approximate numerics
- Date and time
- Characters
  - Unicode character strings
  - Binary strings
- Other data types

DATA TYPE

Data type	range	storage
bigint	-2^63-2^63	8 bytes
int	-2^31-2^31	4 bytes
Samllint	-2^15-2^15	2 bytes
Tinyint	2^0-2^7	1 byte

But how? How does computer save int? BINARY,
16 = 0b10000 = $(10000)_2$

So what? Let's just use the largest range possible …?
There's always a catch

Data type

- Unicode
  - Utf-8
  - Utf-16
- Ascii ?
- Hex ?

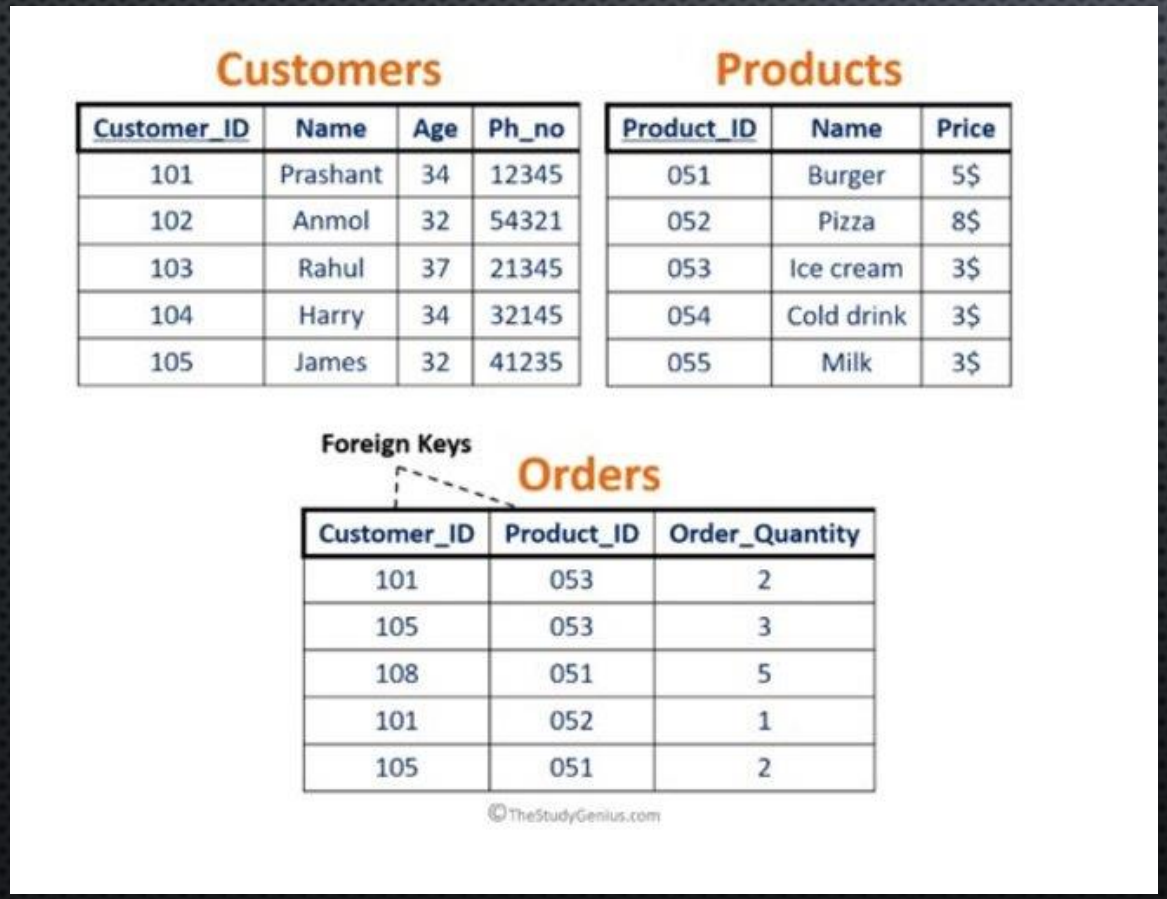
SQL

- (**Structured Query Language**) is a standardized programming language that's used to manage relational databases and perform various operations on the data in them. ... SQL became the de facto standard programming language for relational databases after they emerged in the late 1970s and early 1980s.
- Query
  - (n.) a question, especially one expressing doubt or requesting information.

SQL

- Reserved key words
  - Select
  - From
  - Where
  - Order by
  - Group by/ having
- Aggregation functions: sum, max, min, count, …

SQL



Customers

Customer_ID	Name	Age	Ph_no
101	Prashant	34	12345
102	Anmol	32	54321
103	Rahul	37	21345
104	Harry	34	32145
105	James	32	41235

Products

Product_ID	Name	Price
051	Burger	5$
052	Pizza	8$
053	Ice cream	3$
054	Cold drink	3$
055	Milk	3$

Foreign Keys

Orders

Customer_ID	Product_ID	Order_Quantity
101	053	2
105	053	3
108	051	5
101	052	1
105	051	2

Q1: what are the customers' names?

SQL

Customers

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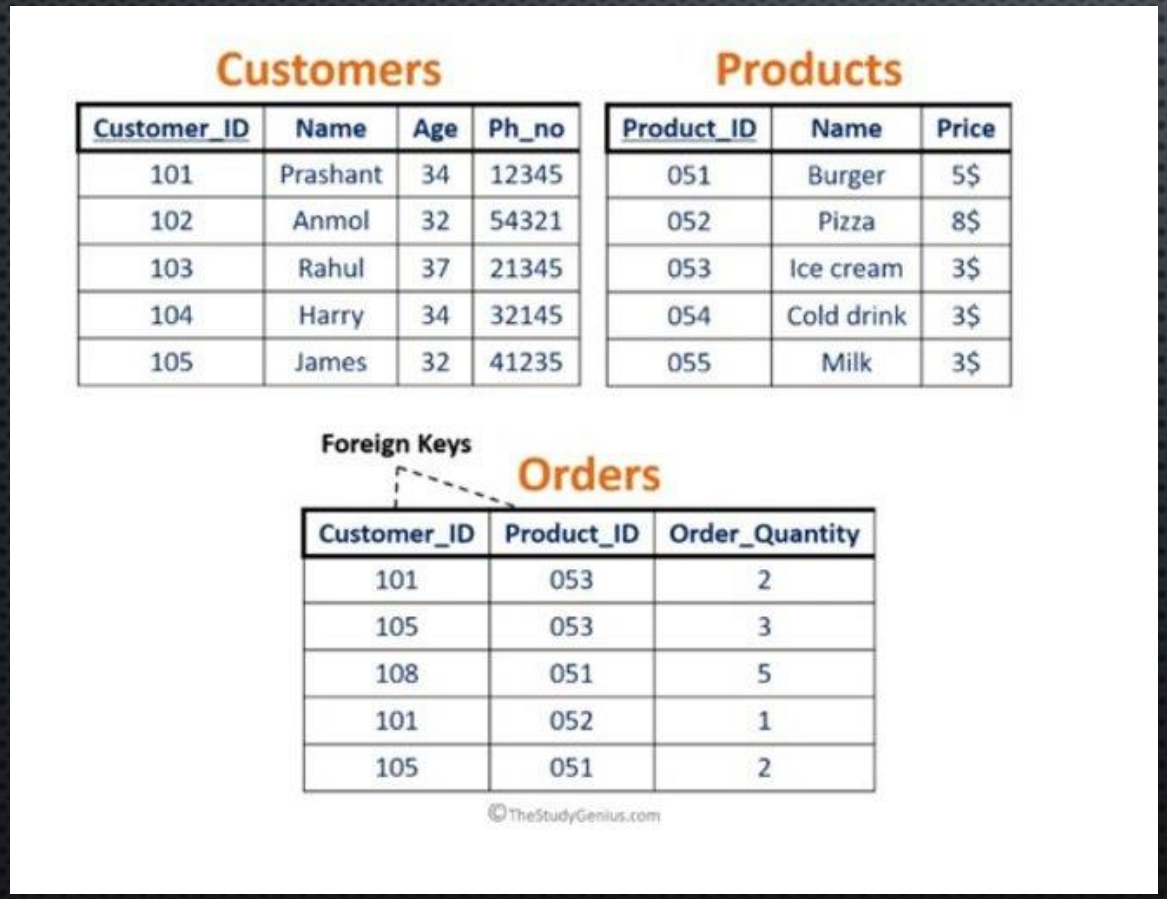
Q: what are the customers' names?

A:

```
Select Name
From Customer;
```

SQL



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Q2: Names of the customer who are older (greater or equal to) 25?

SQL

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Products

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Foreign Keys

Orders

Customer_ID	Product_ID	Order_Quantity
101	053	2
105	053	3
108	051	5
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Q2: Names of the customer who are older (greater or equal to) 25?

A:

```
Select Name
From Customer
Where Age >= 25 ;
```

SQL

Customers

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Foreign Keys

Orders

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Q3: Price of Products in descending order

SQL

Customers

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Products

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Foreign Keys

Orders

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Q3: Price of Products in descending order

A:

```
Select *
From Products
Order By Price DESC ;
```

SQL

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Q4: customerid for those who made more than 2 purchases?

SQL

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Products

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Foreign Keys

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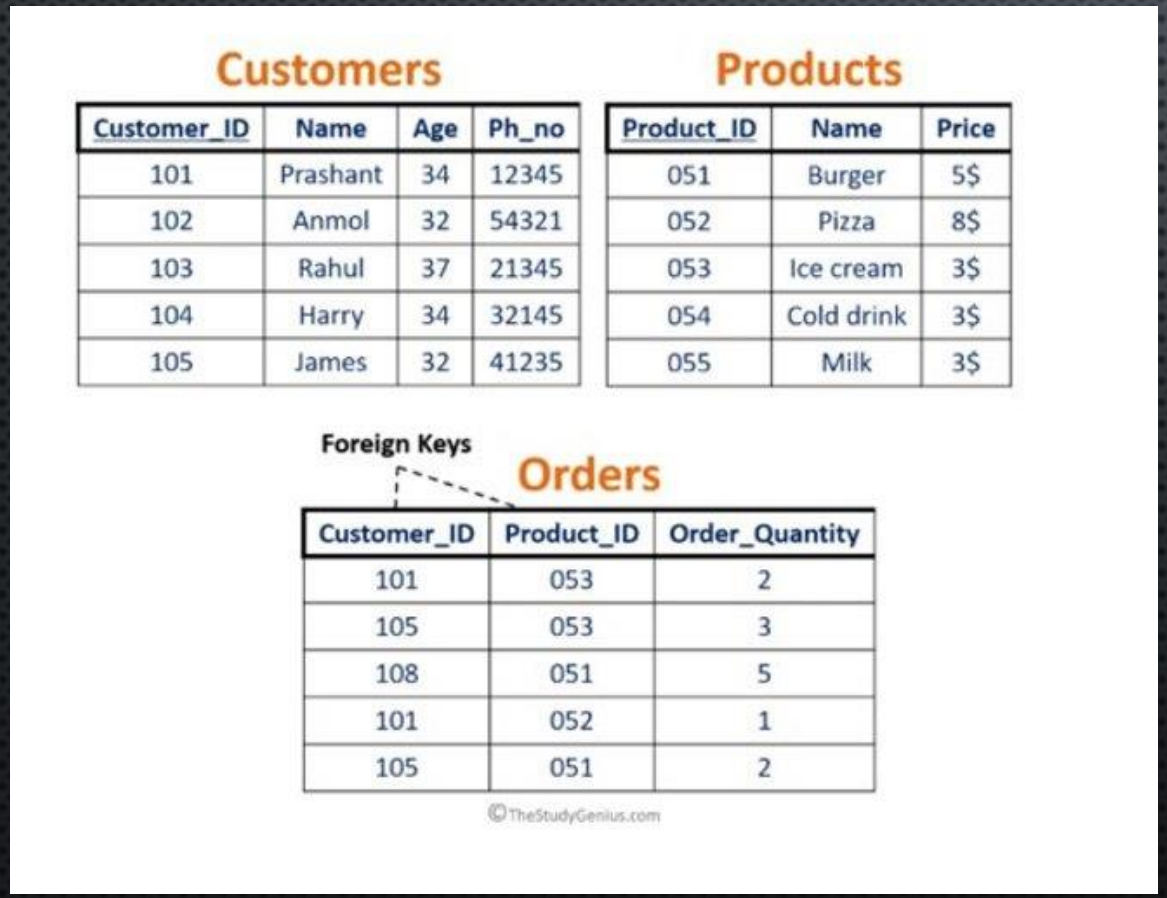
Q4: maximun amount of item purchased per customer?

A:

```
Select customer_id,
max(order_quality)
From Orders
Group by customer_id;
```

SQL



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Foreign Keys

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Q5: customerid for those who made more than 2 purchases?

SQL

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Foreign Keys

Orders

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105	053	3
108	051	5
101	052	1
105	051	2

Q5: customerid for those who made more than 2 purchases?

A:

```
Select *
From Orders
Group by customer_id
Having count(*) > 1;
```

Quiz

- Try your first query
- Revising the Select Query I